

RUNNING HEAD: MEDIUM OF EXCHANGE MATTERS

Medium of Exchange Matters: What's Fair for Goods Is Unfair for Money

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Abstract

Organized groups face a fundamental problem of how to distribute resources fairly. We find people view it as less fair to distribute resources equally when the allocated resource invokes the market by being a medium of exchange rather than a good that holds value in use. Importantly, these differences in fairness can be attributed to the extent a resource is a medium of exchange and not other essential properties of money (i.e., a unit of account or a store of value). These findings suggest that egalitarian outcomes have a greater likelihood of being accepted as fair when the resources being distributed take the form of in-kind goods rather than cash transfers.

A fundamental problem of any organized group is how to allocate scarce resources among its members. The preference for distributing resources equally among group members emerges early on in human development between the ages of 3 to 8 (Fehr, Bernhard, & Rockenbach, 2008). Although a strong preference for equality continues to be the prevailing norm of distributive justice within the social and political spheres of life, a preference for differentiation based on individual contributions is normative within the economic domain (Bazerman, White, & Loewenstein, 1995; Hochschild, 1981). This research article investigates whether, within the economic domain of work, preferences for egalitarianism vary as a function of the resources being distributed. Specifically, we show that the equal distribution of resources independent of individuals' contributions is deemed less fair when the resource is a medium of exchange in the market than when the resource derives its value from use.

Importantly, three essential characteristics of money distinguish it from resources that have their value in use (e.g., Frank & Bernake, 2004): a medium of exchange (an asset used to purchase goods and services), a unit of account (standard and easily divided numerical unit of value), and a store of value (reliably saved and retrieved). Money need not have any inherent value so long as it is a consensual medium of exchange in the market. In other historical periods, goods that held inherent value were used as a medium of exchange. For instance, the word "salary" (from the Latin word *salarium* meaning salt) has its etiology in the practice of compensating Roman soldiers for their services with the valuable commodity of salt.

Although the use of a medium of exchange for goods and services is relatively recent in human history (Burgoyne & Lea, 2008), the introduction of token reinforcers with chimpanzees has demonstrated that a medium of exchange can be as effective as food to conditionally reinforce behavior (Schwartz & Robbins, 1995). As the primary proxy for scarce resources in

modern society, money has been directly linked with such basic drives as hunger and sexual attraction (Briers, Pandeare, Dewitte, & Warlop, 2006; Nelson & Morrison, 2004).

If money is merely a proxy for resources, it should be allocated just like any other in-kind resource. Resources, however, are associated with distinct norms of allocation that when applied will lead people to treat monetary resources differently than non-monetary resources. In particular, Relational Models Theory (Fiske, 1992) distinguishes a market-pricing model in which resources are allocated based on precise ratios of value in a market exchange as distinct from allocation models based on social relationships (i.e., norms of cooperation, hierarchy, and tit-for-tat exchange). While the allocation models based on social relationships are acquired first in human development, the acquisition of a market-pricing model begins as early as age 9. When inputs are heterogeneous, precise differentiation among individuals based on inputs is only possible within a market-pricing allocation model. Consequently, the predominant model for the organization of work and employment contracts is market-pricing.

Research demonstrates money is implicitly linked with the market-pricing model (McGraw & Tetlock, 2005; Vohs, Mead, & Goode, 2008). Studies show that having people unconsciously think of money decreases the application of social relationship models in terms of cooperation and communal behavior (Vohs, Mead, & Goode, 2006). Moreover, Heyman and Ariely (2004) find that the introduction of money into requests for assistance can undermine the degree of help individuals offer in return. When individuals are paid for their help with money, a market-pricing model is invoked in which individuals adjust their helping effort in direct relationship to the amount of money they are offered as a gift for the activity; whereas, when individuals are asked to provide help in exchange either for no money or for non-monetary gifts, social relationship models are invoked in which individuals' helping efforts are independent of

what they receive in return. Irrespective of individuals' motivations to help others, it is a violation of the market-pricing model to distribute goods independent of relevant inputs.

Recent research has focused on the implementation of a fairness motive when it is costly or directly conflicts with self-interest (Knoch et al., 2006; Marlowe et al., 2008). In our investigation, we focus only on evaluations of fairness and elicit judgments in the absence of self-interest or altruism. We examine allocation preferences within an employment context where the preference for allocating money equally is likely to be evaluated as less fair than allocating money according to individual inputs. Before conducting our experiments, we first carried out a pilot study to verify this assumption and its cultural generalizability.

Pilot Study

Employees from the same multinational organization in Argentina (n=65), Australia (n=38), Brazil (n=116), Mexico (n=70), Philippines (n=44), Singapore (n=42), Taiwan (n=90), and the United States (n=534) imagined they were a division manager who was in charge of distributing 1 million dollars of unexpected profits among 100 employees. Participants evaluated fairness on a 9-point rating scale (1 = *extremely unfair*, 9 = *extremely fair*). Results showed the distribution of money to employees based on their inputs was rated as more fair ($M = 5.16$, $SE = .11$) than allocating an equal amount to each employee ($M = 2.50$, $SE = .08$), $F(1, 991) = 385.15$, $p_{rep} > .99$, $p\eta^2 = .280$. Follow-up analyses revealed that the pattern of rating the allocation of money according to inputs as significantly fairer than equality held within each country sampled (all $p\eta^2 > .15$). Based upon this cross-cultural evidence for our assumption, we used this context to experimentally test our hypothesis.

Experiment 1

If it is the relational models invoked by a resource that determine allocation preferences, we should be able to observe variation within the economic domain of the employment context depending upon the resource being allocated. We first test the effect of a medium of exchange invoking market-pricing not only using the resource of money but also the phenomenon of credit card reward points, which we define in terms of a medium of exchange (i.e., points exchangeable for goods and services). We compare these two resources that are both a medium of exchange with other standard in-kind goods that have their value in use (i.e., time and food). Furthermore, we manipulate the size of the resource to be allocated as a way to assess whether the value of the resource being allocated influences preferences for equality.

Method

Participants

Two hundred and eighty-six participants were recruited from a nation-wide database maintained by a private university.

Design and Procedure

Participants were asked to imagine that a division manager had engaged them as an outside consultant to determine the fair allocation of resources among 10 employees.

Manipulation. Participants were randomly assigned to different resource conditions which varied the type and the size of the resources to be allocated. We experimentally varied the resource to be money (“\$20,000”), points (“20,000 credit card reward points exchangeable for goods and services”), time (“20 vacation days”), and food (“20 boxes of chocolate”).

Additionally, participants were randomly assigned to the same resource types where the amounts

were exactly twice as much (\$40,000, 40,000 credit card points redeemable for goods and services, 40 vacations days, or 40 boxes of chocolate).

Scenario. Participants read the following description:

The president of Megacorp (a medium-sized telecommunications firm that does most of its business in the Midwest) received a report about the performance of the different divisions of his company. The sales division did much better than projected for this fiscal year and because of the high level of sales the president has given the division manager [resource type] to distribute among the division's 10 front line sales associates.

Preference for an equality allocation. Participants rated on a scale (1 = *extremely unfair*, 9 = *extremely fair*) the allocation plan “Give an equal amount of the [resource type] to each sales associate”.

Results and Discussion

We conducted a 4 (resource type) by 2 (resource size) ANOVA on participants' fairness ratings of allocating the resource equally among 10 employees. Again, results revealed a significant main effect of resource, $F(3, 260) = 4.95$, $p_{rep} = .98$, $p\eta^2 = .05$. No significant effects of size emerged, $F(1, 260) = .57$, $p_{rep} = .53$, $p\eta^2 = .002$; nor any size by resource interaction, $F(3, 260) = 1.02$, $p_{rep} = .58$, $p\eta^2 = .012$. A clear pattern emerged (see Table 1) where equality as an allocation principle was considered less fair when the resource was a medium of exchange (money or points) than when the resource had value in use (time or food). Interestingly the amount of the resource being allocated did not appear to influence allocation preferences to the extent that doubling the size of the resource did not have an effect on allocation preferences for any of the different resources including money. The possibility that participants might have

assumed that each additional in-kind good had a greater diminishing marginal return to each individual than was the case for an additional unit of a medium of exchange was less likely given that allocating a larger pool of these resources failed to increase preferences for equality.

Experiment 2

In our second experiment, we directly manipulate the degree to which points are a medium of exchange in the market in a manner that holds all other properties of the resource constant (i.e., unit of account and a store of value). In order to directly test whether the degree to which a resource is a medium of exchange is a causal variable in allocation preferences, we build upon the finding that people understood it to be less fair to allocate both money and points according to an equality principle. Credit card reward points are a medium where we can directly manipulate the extent to which the resource may be exchanged for goods and services. This experiment employs a modified version of the materials used in the previous experiment but compares participants' allocation preferences for equal distributions among 10 employees independent of inputs in experimental conditions that vary exclusively in what 2,000 credit card reward points are exchangeable for given that each point has a purchasing power of \$1. By using credit card reward points as the resource to be allocated, we are able to precisely vary the extent to which the points are a medium of exchange in the market while holding constant the degree to which the resource is a unit of account and a store of value.

Method

Participants

Four hundred and forty-two participants were recruited from the same nation-wide database used in the previous experiment.

Design and Procedure

Participants read a modified version of the materials used in the previous experiment, but here we compared participants' allocation preferences for equal distributions among 10 employees independent of inputs in experimental conditions that varied exclusively in what 2,000 credit card reward points were exchangeable for. Participants were told each point had a purchasing power of \$1.

Manipulation. Participants randomly assigned to the "Points-4 resources" condition were told "These credit card reward points are redeemable for ALL books, music, movies, and electronics." Participants in the "Points-1 resource" condition were randomly assigned to a condition where the credit card reward points were redeemable for ONLY one of the four resources (i.e., random assignment to "These credit card reward points are redeemable for ONLY books", "These credit card reward points are redeemable for ONLY music", "These credit card reward points are redeemable for ONLY movies" or "These credit card reward points are redeemable for ONLY electronics").

Preference for an equality allocation. Participants rated on a scale (1 = *extremely unfair*, 9 = *extremely fair*) the allocation plan "Give an equal amount of the 2,000 credit card reward points to each sales associate."

Monetary value of points. After the fairness evaluation, participants indicated the most amount of money they would bid for 2,000 credit card reward points described in the scenario in an Ebay style auction. This served as an indicator of the subjective value of the credit card reward points.

Results and Discussion

Participants were randomly assigned to a condition in which the points were exchangeable for 4 different types of goods (books, electronics, movies, or music) or assigned to a condition in which the points were exchangeable for only 1 of those same 4 goods. The omnibus ANOVA on participants' ratings of fairness for an equal allocation of resources varied significantly across conditions, $F(4, 402) = 2.45$, $p_{rep} > .88$, $p\eta^2 = .024$. Table 2 reports the means across all conditions. A planned contrast showed that participants exhibited a greater preference to allocate the points equally when the points were redeemable only for one type of good than when the points were redeemable for multiple goods, $F(1, 405) = 8.95$, $p_{rep} = .98$, $p\eta^2 = .022$. After indicating allocation preferences, participants indicated how much of their own money they would bid to purchase 2,000 of the credit card reward points described in the scenario. Consistent with the finding in the first experiment that the value of the resource was unrelated to allocation preferences, monetary bid values for the credit card reward points were uncorrelated with participants' preference for equal allocations, $r = -.03$, $p_{rep} = .46$. Critically, this study demonstrated that the more a resource had the properties of being a true medium of exchange in a market, the less fair it was to allocate the resource equally among individuals independent of their inputs.

General Discussion

The two experiments reported here provide support for the hypothesis that a resource invoking the market by being a medium of exchange decreases preferences for egalitarian distributions. The results of our experiments identified the extent to which a resource is a medium of exchange as a causal variable in fairness allocation preferences. Interestingly, our manipulation of the degree to which a resource can be exchanged for goods mimics the properties of exchange department stores imposed around gift certificates when they were first

introduced at beginning of the 20th century. In order to distinguish the gift certificate as a resource distinct from a cash transfer, the first gift certificates designated a specific type of merchandise (e.g., gloves and shoes) for which the certificate could be redeemed (Zelizer, 1994).

All resources are not created equal; and we find that resources invoking the market by being a medium of exchange diminish preferences for egalitarian distributions. When we seek to have individuals accept egalitarian distributions of resources as fair, it may be more effective to focus group members on the distribution of specific goods that have value in use. In both developed and developing countries, a highly similar amount of gross domestic product is redistributed through in-kind transfers, such as food stamps or housing subsidies (Currie & Gahvari, 2008). Often it is assumed that people prefer the redistribution of wealth to occur through in-kind transfers, so that the proper use of funds can be ensured even in cases where cash transfers are more efficient (Currie & Gahvari, 2008; Murray, 1994). However, the current studies suggest that the relational models associated with the resource being distributed may play an important role in how the public at large understand fairness.

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Table 1.

Egalitarian allocation preferences as a function of resource type in Experiment 1

	Resource	Rating Equality Fair
n=48	Money	5.46 _a (1.58)
n=53	Points-General	5.93 _a (1.85)
n=88	Time	6.63 _b (2.07)
n=79	Food	6.66 _b (2.21)

Note. Mean rating for equality was on a 1 (extremely unfair) to 9 (extremely fair) scale. Means not sharing a subscript within study differ at the .05 level as determined by an independent sample *t* test.

Table 2.

Egalitarian allocation preferences and monetary bids for points as a function of resource exchangeability in Experiment 2

Credit Card Points	Rating Equality Fair	Bid Points \$
Points-4 resources (n=155)	5.56 _a (1.99)	60.39 _a (65.19)
Points-1 resource (n=272)	6.18 _b (2.02)	50.74 _a (64.95)
Books (n=54)	6.06 (2.09)	49.20 (61.54)
Electronics (n=74)	6.09 (1.96)	61.97 (79.87)
Movies (n=67)	6.36 (1.87)	53.15 (58.27)
Music (n=77)	6.19 (2.17)	38.99 (55.25)

Note. Mean rating for equality was on a 1 (extremely unfair) to 9 (extremely fair) scale. Bid points was the most amount of US\$ participants indicated they would bid for 2,000 points in an Ebay style auction. Means not sharing a subscript within column between Points-4 resource and Points-1 resource differ at the .05 level as determined by an independent sample *t* test.